TEHAMA COUNTY AIR POLLUTION CONTROL DISTRICT

RULE 4:35 - VEHICLE AND MOBILE EQUIPMENT COATING OPERATIONS
(Adopted 11/10/1998)

A. Purpose: To Control Volatile Organic Compound emissions from vehicle and mobile equipment coating operations.

B. Applicability: The provisions of this rule apply to any person who supplies, sells, offers for sale, applies or specifies the use of coatings for vehicles, mobile equipment, and their parts or components.

1. The provisions of this rule shall become effective July 1, 1999.

C. Exemptions:

1. The sales prohibition in Subsection E.1. and transfer efficiencies in Subsection E.5. shall not apply to the sale of any coating supplied in a nonaerosol container with a capacity of 16 fluid ounces or less, and shall not apply to any coating supplied in a hand-held, nonrefillable aerosol container.

2. The sales prohibition in Subsection E.1. shall not apply to the sale of coatings where the emissions to the atmosphere from the application of those coatings are controlled by a District approved VOC add-on control device that meets the requirements of Subsection E.4. of this Rule.

3. The sales prohibition in Subsection E.1. shall not apply to any coating shipped outside of the District for use outside of the District, or sold in the District for use outside the District.

4. Any application of logos, letters, numbers and graphics to a painted surface, with or without a template, shall be exempt from this rule.

5. Any coating operation of a vehicle by a resident of a one or two family dwelling shall be exempt from this rule provided:

a. The resident is the registered owner of the vehicle being coated;

b. The coating operation is not being conducted as a business;

c. The coating operation is limited to two vehicles per year;

d. The coating operation does not cause a public nuisance.

6. With prior written approval of the APCO and on a limited term basis, the requirements of Subsection E.9., Spray Booths and Prep Stations, shall not apply to the coating of vehicle(s) which due to shape or size, cannot reasonably be

contained in any available substitute Spray Booth. All operations shall be conducted in a manner that a public nuisance is not caused to surrounding receptors.

7. The requirements of Subsection E.9., Spray Booths and Prep Stations, shall not apply to:

   a. Any repair, touch-up, or spot priming operation which does not exceed a total of nine (9) square feet per vehicle. All operations shall be conducted in a manner that a public nuisance is not caused to surrounding receptors.

   b. Any weld-thru primer.

   c. Any application of coatings to agricultural equipment.

   d. Any applications of coatings to owner-operated construction vehicles.

D. Definitions:

1. Active Solvent Losses: The active solvent losses are the emissions during all steps of a spray gun equipment cleaning operation and are expressed in units of grams of solvent loss per cleaning cycle.

2. Antiglare/Safety Coating: A coating which does not reflect light.

3. Camouflage Coating: A coating applied on motor vehicles to conceal such vehicles from detection.

4. Catalyst: A substance whose presence initiates the reaction between chemical compounds.

5. Color Match: The ability of a repair coating to blend into an existing coating so that color difference is not visible.

6. Coating: A liquid, liquefiable or mastic composition which is converted to a solid protective, decorative, or functional adherent film after application as a thin layer.

7. Electrophoretic Dip: A coating application method where the coating is applied by dipping the component into a coating bath and an electrical potential difference exists between the component and the bath.

8. Electrostatic Application: A sufficient charging of atomized paint droplets to cause deposition principally by electrostatic attraction. This application shall be operated at a minimum of 60 KV power.

9. Exempt Organic Compounds: Any compound identified as exempt under the definition of "Volatile Organic Compounds."

10. Extreme Performance Coating: Any coating used on the surface of a vehicle, mobile equipment or their parts or components which is exposed to extreme environmental conditions such as high temperatures, corrosive or erosional environments, during the vehicle's principal use.

11. Four-Stage Coating System: A topcoat system composed of a ground coat portion, a pigmented basecoat portion, a semi-transparent midcoat portion, and two transparent clearcoat portions. Four-stage coating systems VOC content shall be calculated according to the following formula:

$$\text{VOC T4-stage} \quad \frac{\text{VOCgc} + \text{VOCbc} + \text{VOCmc} + 2\ \text{VOCcc}}{5}$$

Where:

VOC T4-stage	=	the average of the VOC content as applied in the ground coat (gc), basecoat (bc), midcoat (mc), and clearcoat (cc) system.
VOCgc	=	the VOC content as applied of any given groundcoat.
VOCbc	=	the VOC content as applied in the basecoat.
VOCmc	=	the VOC content as applied of any given midcoat.
2 VOCcc	=	two times the VOC content as applied of any given clearcoat.

12. Grams of VOC Per Liter of Coating Less Water And Less Exempt Organic Compounds: The weight of VOC per combined volume of VOC and coating solids and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Coating Less Water and Less Exempt Organic Compounds} = \frac{\text{Ws} - \text{Ww} - \text{Wes}}{\text{Vm} - \text{Vw} - \text{Ves}}$$

Where:

Ws =	Weight of volatile compounds (grams)
Ww =	Weight of water (grams)
Wes =	Weight of exempt organic compounds (grams)
Vm =	Volume of material (liters)
Vw =	Volume of water (liters)
Ves =	Volume of exempt organic compounds (liters)

13. Grams of VOC Per Liter of Material: The weight of VOC per volume of material

and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Material} = \frac{Ws - Ww - Wes}{Vm}$$

Where:

Ws = Weight of volatile compounds (grams)
Ww = Weight of water (grams)
Wes = Weight of exempt organic compounds (grams)
Vm= Volume of material (liters)

14. Group I Vehicles: These vehicles include passenger cars, large/heavy duty truck cabs and chassis, light and medium duty trucks and vans, and motorcycles.

15. Group II Vehicles: These vehicles include public transit buses.

16. Gun Washer: Electrically or pneumatically operated system that is designed to clean spray application equipment while enclosed. A gun washer may also be considered a gun cleaning system that consists of spraying solvent into an enclosed container using a snug fitting cover.

17. Hand Application Methods: The application of coatings by nonmechanical hand-held equipment including but not limited to paint brushes, hand rollers, caulking guns, trowels, spatulas, syringe daubers, rags, and sponges.

18. High-Volume, Low-Pressure Application (HVLP): Spray equipment which uses a high volume of air delivered at pressures between 0.1 and 10 psig.

19. Low Emission Spray Gun Cleaner: Any properly used spray equipment cleanup device which has passive solvent losses of no more than 0.6 grams per hour and has active solvent losses of no more than 15 grams per operating cycle as defined by the test method in Subsection F.6.

20. Metallic/Iridescent Topcoat: Any topcoat which contains more than 5 g/l (.042 lb/gal) of iridescent particles, composed of metal as metallic particles or silicon as mica particles, as applied, where such particles are visible in the dried film.

21. Mobile Equipment: Any equipment, other than vehicles (as defined in this rule), which may be drawn or is capable of being driven on a roadway, including, but not limited to, truck trailers, camper shells, mobile cranes, bulldozers, concrete mixers, street cleaners, golf carts, all terrain vehicles, implements of husbandry, hauling equipment used inside and around airports, docks, depots, and industrial and commercial plants, but excluding utility bodies.

22. Operating Cycle: An operating cycle consists of all steps carried out during a

cleaning operation.

23. Passive Solvent Losses: The passive solvent losses are the emissions from spray gun cleaning equipment when the equipment sits idle between cleaning cycles and are a result of natural evaporation from the equipment.

24. Prep Station: Any spraying area that has positive ventilation installed which provides a minimum of six complete air changes per hour and that prevents the escape to the atmosphere of overspray particulate matter using properly maintained filters.

25. Pretreatment Wash Primer: Any coating which contains a minimum of 0.5% acid by weight, is necessary to provide surface etching and is applied directly to bare metal surfaces to provide corrosion resistance and adhesion.

26. Primer: Any coating applied prior to the application of a topcoat for the purpose of corrosion resistance and adhesion of the topcoat.

27. Primer Sealer: Any coating applied prior to the application of a topcoat for the purpose of corrosion resistance, adhesion of the topcoat, color uniformity, and to promote the ability of an undercoat to resist penetration by the topcoat.

28. Primer Surfacer: Any coating applied prior to the application of a topcoat for the purpose of corrosion resistance, adhesion of the topcoat, and which promotes a uniform surface by filling in surface imperfections.

29. Reactive Organic Compound (ROC): For the purposes of this rule, the term "reactive organic compounds" (ROC's) are assumed to be the same as these compounds defined under the "volatile organic compound" (VOC) definition in District Rule 1: 2.

30. Reducer: Any volatile liquid used to reduce the viscosity of the coating. This liquid may be solvents, diluents or mixtures of both.

31. Specialty Coatings: Coatings which are necessary due to unusual and uncommon job performance requirements. These coatings include, but are not limited to, weld-thru primers, adhesion promoters, uniform finish blenders, elastomeric materials, gloss flatteners, bright metal trim repair, and antiglare/safety coatings.

32. Spray Booth: Any power ventilated structure of varying dimensions and construction provided to enclose or accommodate a spraying operation and provides a minimum of six complete air changes per hour. A spray booth shall confine and limit, by dry or wet filtration, the escape to the atmosphere of overspray particulate matter using properly maintained filter(s).

33. Three-Stage Coating System: A topcoat system composed of a pigmented

basecoat portion, a semi-transparent midcoat portion, and two transparent clearcoat portions. Three-stage coating systems VOC content shall be calculated according to the following formula:

$$\text{VOC T3-stage} = \frac{\text{VOCbc} + \text{VOCmc} + 2\ \text{VOCcc}}{4}$$

Where:

VOC T3-stage	=	the average of the VOC content as applied in the basecoat (bc), midcoat (mc), and clearcoat (cc) system.
VOCbc	=	the VOC content as applied in the basecoat.
VOCmc	=	the VOC content as applied of any given midcoat.
VOCcc	=	two times the VOC content as applied of any given clearcoat.

34. Topcoat: Any coating applied over a primer or an original equipment manufacturer finish for the purpose of protection or appearance.

35. Transfer Efficiency: The ratio of the weight of coating solids which adhere to the object being coated to the weight amount of coating solids used in the application process, expressed as a percentage.

36. Two-Stage Coating System: A topcoat consisting of a pigmented basecoat and two transparent clearcoats. Two-stage coating systems VOC content shall be calculated according to the following formula:

$$\text{VOC T2-stage} = \frac{\text{VOCbc} + 2\text{VOCcc}}{3}$$

Where:

VOC T2-stage	=	the average of the VOC content as applied in the basecoat (bc) and clearcoat (cc) system.
VOCbc	=	the VOC content as applied in the basecoat.
2VOCcc	=	two times the VOC content as applied of any given clearcoat.

37. Undercoat: Any pretreatment wash primer, precoat, primer, primer surfacer, or primer sealer.

38. Utility Body: A special purpose compartment or unit that will be bolted, welded, or affixed onto an existing cab and chassis. The compartment may serve as storage for equipment or parts.

39. Vehicle: A vehicle is any of the following: passenger cars, large/heavy duty truck cabs and chassis, light and medium duty trucks and vans, motorcycles, public transit buses, or military tanks or other tracked military vehicles.

40. Volatile Organic Compounds (VOC): Refer to District Rule 1: 2. (For the purposes of implementing District Rule 2: 3A New Source Review and Rule 2: 3B Emission Reduction Credit And Banking Rule, the term ROC is assumed to be the same as those compounds defined under the VOC definition listed in Rule 1: 2).

41. Water-Based Temporary Transit Coating: Any water-based coating that is intended to protect new motor vehicle finishes from certain forms of damage such as iron dust, soot, acid rain, and other airborne pollutants during transit and is removed prior to sale of the vehicle.

42. Weld-Thru Primer: Any primer applied from an aerosol can, 16 ounces or less, to bare steel prior to welding that steel area. The purpose of the weld-thru primer is to inhibit corrosion in the weld area.

E. Requirements

1. After the date expressed below, no person shall manufacture, solicit, require for use, specify, sell, or coat any vehicle, mobile equipment, or their parts or equipment, as defined in this Rule, using any coating with a Volatile Organic Compound (VOC) content in excess of the following limits, expressed as grams of VOC per liter of coating applied (lbs/gal), excluding water and exempt organic compounds, except as provided in Section E.4., "Add-on Control Equipment Option", or Section C., "Exemptions":

LIMITS

Grams of VOC per Liter of Coating (lbs/gal),
Less Water and Less Exempt Organic Compounds

July 1, 1999

Group I Vehicles & Color Match for Group II Or Mobile Equipment	Group II Vehicles Or Mobile Equipment No Color Match

Pretreatment Wash	780 (6.5)	780 (6.5)
Primer/Primer Surfacer	340 (2.8)	340 (2.8)
Primer Sealer	420 (3.5)	340 (2.8)
Single-Stage/Two-Stage	600 (5.0)	420 (3.5)
Topcoats of More Than 2	600 (5.0)	420 (3.5)
Specialty Coating	840 (7.0)	840 (7.0)
Extreme Performance	--------	750 (6.2)
Camouflage	--------	420 (3.5)

2. Coatings Containing 1,1,1-Trichloroethane: No person shall apply any coating to any vehicle, mobile equipment, or their parts or components, if that coating contains 1,1,1-trichloroethane.

3. Extreme Performance Coating Petition: Any person seeking to apply an extreme performance coating as defined in this Rule to a vehicle, mobile equipment, or their parts or components shall comply with the following requirements:

   a. A petition shall be submitted to the Air Pollution Control Officer (APCO) stating the performance requirements, volume of coating and VOC level that is attainable.

   b. If the APCO grants written approval, then that approval shall be valid for one year. If applicable, such petition shall be resubmitted on an annual basis.

   c. If the APCO grants written approval, such approval shall contain volume and VOC limit conditions.

4. Add-on Control Equipment Option:

   a. A person may comply with the provisions of Subsection E.1., Coating Limits, by using air pollution control equipment provided that:

      1) The combined control and capture efficiency shall reduce VOC emissions from an emission device by at least 85 percent, by weight; and

      2) The control system must be designed and operated for the maximum collection of fugitive emissions according to the EPA's “Guideline for Developing Capture Efficiency Protocols”; and

      3) Written approval in the form of an Authority to Construct and a Permit to Operate for such equipment is received from the Air Pollution Control Officer (APCO).

b. A person may comply with the provisions of Subsection E.5. (transfer efficiency) by using add-on control equipment provided the combined control and capture efficiency of VOC is at least 92 percent, by weight.

5. Transfer Efficiency: No person shall apply any coating to any vehicle or mobile equipment or their parts and components unless one of the following methods is properly used:

   a. Hand application methods

   b. Electrophoretic dip coating

   c. Electrostatic application

   d. High-Volume, Low-Pressure (HVLP) application

   e. Any other coating application method which has been demonstrated to be capable of achieving at least 65 percent transfer efficiency.

6. Compliance Statement Requirement: The manufacturer of coatings subject to this Rule shall include a designation of the VOC content as supplied, including coating components, expressed in grams per liter or pounds per gallon, excluding water and exempt organic compounds, on labels or data sheets. This designation shall include a statement of manufacturer's recommendation regarding thinning, reducing, or mixing with any other VOC containing materials. This statement shall include the VOC on an as-applied basis, excluding water and exempt organic compounds, based on the manufacturer's recommendations.

7. Surface Preparation and Cleanup Solvent: The requirements of this Subsection shall apply to any person using organic solvent for surface preparation and cleanup.

   a. Closed containers shall be used for the storage or disposal of solvent-containing cloth or paper used for surface preparation and cleanup. Containers shall be nonabsorbent.

   b. No person shall use organic compounds for spray equipment cleanup unless an enclosed gun washer or "low emission spray gun cleaner" as required by this Rule is properly used for cleaning.

   c. No person shall use VOC-containing materials which have a VOC content of more than 200 grams per liter (1.67 lbs/gal) of material for substrate surface preparation prior to coating. This limit shall not apply to surface preparation material applied from a hand-held spray container. The VOC limit for VOC-containing material applied from hand-held spray containers shall not exceed 780 g/l (6.5 lbs/gal).

8. Storage of VOC-Containing Materials: All VOC containing materials, including but not limited to, fresh or spent solvent, coatings and reducers, shall be kept in closed containers when not in use.

9. Spray Booth and Prep Stations: Effective January 1, 2000 no person shall apply any coating to any complete (entire) vehicle unless that application is performed within a properly maintained and operated Spray Booth. All spraying of parts or components of a vehicle shall be done in a properly maintained and operated Prep Station or Spray Booth.

F. Test Methods

1. Coating VOC content shall be determined using EPA Method 24. The exempt organic compound content of coatings or solvents shall be determined using ASTM Method D4457-85. Compliance with the prohibition of sale shall be determined by measuring the VOC content of each and every component of a coating or coating system which has been reduced using the manufacturer's recommended type and maximum amount of reducer.

2. The measurement of acid content of pretreatment wash primers shall be done in accordance with ASTM Method D 1613-85 (modified).

3. The measurement of the metal and silicon content of metallic/iridescent coatings shall be determined by South Coast AQMD Method No. 318, "Determination of Weight Percent of Elemental Metal in Coatings by X-Ray Diffraction."

4. The collection and capture efficiency of organic emissions as specified in Subsections E.5. shall be measured as follows:

   a. Capture efficiency shall be determined by the EPA Guidelines for Developing Capture Efficiency Protocols from the Federal Register Part 55 FR 26865, June 29, 1990.

   b. Measurement of vapor flow through pipes shall be determined by EPA Method 2A.

   c. Measurement of organic vapor concentration shall be determined by EPA Method 25A. The calculation of control device efficiency shall be determined only during periods of continuous coating operations and shall be averaged over the duration of the coating operation not to exceed 24 hours.

5. Transfer Efficiency shall be determined using a method which shall be modeled after the test method described in the EPA document (EPA/600/2-88/-26b) "Development of Proposed Standard Test Method for Spray Painting Transfer Efficiency."

6. The active and passive solvent losses from spray gun cleaning systems shall be determined using South Coast Air Quality Management District's "General Test Method for Determining Solvent Losses from Spray Gun Cleaning Systems" dated October 3, 1989. The test solvent for this determination shall be any lacquer thinner with a minimum vapor pressure of 105 mm Hg at 20° C. The minimum test temperature shall be 15° C.

G. Monitoring and Recordkeeping Requirements

1. Any person subject to this rule shall:

a. Maintain and make available to District personnel, a current list of coatings (including specialty coatings) and solvents in use that provides all of the data necessary to evaluate compliance, including the following information, as applicable:

1) Coating, catalyst, additive, solvent, and reducer used.

2) Mix ratio of components used.

3) VOC content of coating as applied or solvent used in grams/liter or lbs./gal. (less water and less exempt organic compounds).

4) Material Safety Data Sheets (MSDS)

b. Maintain records which show on a daily basis the following information:

1) VOC content of the coating or solvent in grams/liter or lbs./gal.

2) Quantity of each coating (including each specialty coating) applied and solvent used. This quantity need not include toners that are added for color matching after preparation of the initial weighed color batch. If purchase records are used to determine the amount of solvents used, then records and manifests of the amounts of solvents disposed of or sent to a recycler must also be maintained.

3) Whether a color match was required.

4) Type of vehicle (I or II) or whether mobile equipment was coated.

2. All records shall be retained for a minimum of two years from the date of each entry and shall be made available to District personnel upon request.

H. Increments of Progress

1. Any person required to install a Prep Station and/or Spray Paint Booth in order to comply with this Rule shall submit to the APCO a complete application for an Authority to Construct no later than July 1, 1999, and shall demonstrate compliance no later than January 1, 2000.